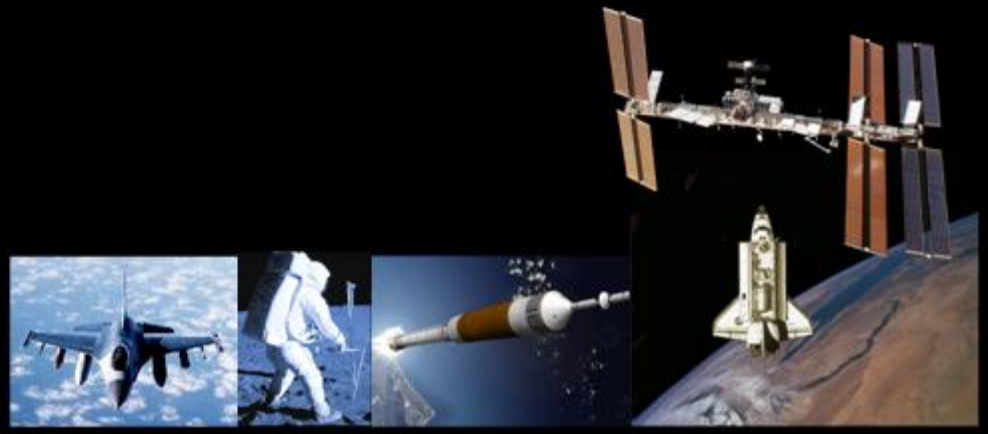
ZIN Technologies

Technology
without Boundaries



YOUR STRATEGIC DIVERSIFIED SMALL BUSINESS PARTNER

Joint Counseling Initiative – March 10, 2009
Carlos M. Grodsinsky, Ph.D.

Technology without Boundaries

SMALL BUSINESS SOLUTION FOR THE LONG TERM

ISO 9001 CERTIFIED

DOD FACILITY CLEARANCE CAPABILITY

DCAA APPROVED FORWARD PRICING

HEADQUARTERED IN CLEVELAND, OHIO

EXPERIENCED TEAM

AWARD WINNING CAPABILITIES

ZIN Technologies

ZIN Technologies a Snapshot

ZIN Technologies Inc. (ZIN) is a minority owned small business (SB)

- **Multi-decade experienced Ground and Flight Hardware Developer**
- **Expertise in Electro-Mechanical Systems, Instrumentation, Power, Data Acquisition, Software Development and Power Conversion products**
- **Experience with NASA, DoD and Commercial customers in high reliability systems and engineered products**

ZIN specializes in Space Flight Hardware Design, Development, Test/Verification and Operations

- **In-depth knowledge of all Phases of Development from Phase A through E**
  - Concept Design and Requirements Formulation
  - Detailed Design and Engineering, Test and Verification
  - Key Decision Point Reviews – SRR, SDR, PDR/CDR, Verification Readiness, Operations Readiness
  - Safety Analysis and Reviews
  - Ground Systems
  - Integration and Operations

ZIN in Summary

- **Located adjacent to NASA Glenn Research Center in Cleveland, OH**
- **150+ person organization consists of scientists, engineers, designers, and technicians experienced in managing complex programs and technical requirements.**
- **ZIN has extensive experience developing NASA human-rated space flight systems. Our engineering Team has designed, fabricated and operated over 100 man-rated space flight payloads with thousands of hours of space flight logged on the shuttle, MIR, and ISS.**
- **42,000 square feet ISO 9001-2000 certified facility – transitioning to AS9100**
- **Robust/Certified Government support systems and DCAA approved forward pricing**
- **DISC Central Verification Activity can provide information regarding our DOD facility clearance status to the appropriately requesting parties at (888)282-7682**
- **We have received numerous quality and performance awards including recognition as a 2003 and 2004 NASA George M. Low Quality Award Finalist**

Technology without Boundaries

SOLUTIONS FOR DEMANDING APPLICATIONS

AEROSPACE

MILITARY

SPACEFLIGHT HARDWARE

INDUSTRIAL APPLICATIONS

ZIN Technologies

EFFECTIVE TECHNICAL SOLUTIONS & PRODUCTS

- **ZIN Can Seamlessly Integrated into large complex system teams based on our experience as a NASA prime contractor**
- **ZIN is an experienced subcontractor with the ability to provide detailed and extensive project reporting to NASA requirements**

Customer Awards and Recognition:

- 2008 NorTECH Innovation Award
- 2007 EATON AEROSPACE Peak of Excellence Award
- 2004 Steve Sabo Engineering Excellence Award
- 2004 NASA George M. Low Award for Quality
- 2003 NASA Minority Contractor of the Year
- 2003 R&D 100 Software Award
- 2003 National Science Foundation Award
- 2003 GRC Quality and Safety Achievement Recognition
- 2002 Silver Snoopy Award
- 2002 GRC Software of the Year Award
- 2002 Manned Spaceflight Awareness Award

Customers / Partnerships:

- NASA Glenn Research Center
- NASA Johnson Spaceflight Center
- NASA Marshall Spaceflight Center
- NASA Langley Research Center
- Canadian Space Agency
- The Cleveland Clinic
- Lockheed Martin
- MOOG
- Benham (SAIC)
- Hamilton Sundstrand
- Northrop Grumman
- The Boeing Company
- Wyle Laboratories
- Ball Aerospace
- Warner Robins Air Logistics Center
- Bastion
- Infinity Technology
- Alphaport
- Eaton Corporation
- NAVY Research Laboratory
- Battelle Memorial Institute
- Department of Energy
- Raytheon/UDT Sensors
- Energizer
- Toshiba Japan
- Carlos Gavassi/U.S. Navy
- Teledevices

Technology without Boundaries

ESTABLISHED ENGINEERING AND MANAGEMENT SYSTEMS

EXPERIENCED TECHNICAL RESOURCES AND MANAGERS

LARGE AND SMALL PROJECT EXPERIENCE

COLLABORATION AND TEAMWORK

ESTABLISHED SUPPORT SYSTEMS

TURN KEY OR TASK ORDER

BUSINESS MANAGEMENT SYSTEMS AND REPORTING

ZIN Technologies

EXPERIENCED ENGINEERING AND MANAGEMENT

Experienced Technical Resources:

- Self-directed motivated work team capable of hardware and end item deliverable accountability
- Project-focused development teams, defined milestones & deliverables
- Long term experience with hardware and software development, launch, mission and flight centers

Experienced Management Team:

- Experienced with Small "turn-key" contracts with small budgets & tight schedules
- Decades Of Experience Working with Customers Such as NASA, DoD, and Fortune 500 Companies
- We are an experienced NASA Prime Contractor with demonstrated responsibilities for large manned space flight programs
  - An example is the $110 Million International Space Station Fluids and Combustion Facility (multi-year and inclusive of sustaining engineering and long-term on-orbit operations)
- Experienced management of multiple subcontractors including large prime contractors, SDBs, 8As, Hub Zone and woman owned certifications

Established Project Management Infrastructure:

- Mature Business and Project Management infrastructure capable of supporting Large Business Management Systems and reporting requirements
- Earned-Value Management systems
- Configuration Management Systems
- Product Assurance Systems
- Verification and Requirement Management Systems
- Scheduling, monthly reporting and administration systems

Established Engineering Support Systems:

- ANSI/ASQC Q9001-2000 Quality System
- Processes controlled via Procedures and Work Instructions
- Manufacturing Work Order System
- Configuration Management expertise for NASA and DOD programs
- Hardware traceability including waivers, deviation, engineering changes through hardware certification
- Experience with ZIN, Konfig and Windchill CM products
- Change Control Board Processes
- Engineering Review Board Processes
- Risk Management Database and PRACA Systems
- Certified-QA inspectors for electronic and mechanical workmanship
- Parts & material tracking including material certifications, material test results, certificates of conformance, lot numbers, and other special documentation

Technology without Boundaries

SOLUTIONS, SERVICES & PRODUCTS

SYSTEMS OF SYSTEMS

MECHANICAL

THERMAL / FLUIDS

OPTICS / LASERS

POWER / CONTROLLERS

ENVIRONMENTAL ANALYSIS & TEST

TEST VALIDATION AND PREDICTIONS

We Develop A Broad Range Of Systems At The Leading Edge Of Space, Defense And Electronics

ZIN Technologies

ZIN TECHNOLOGIES - COMPANY FOCUS

Engineering and Technical Services

- **Systems Engineering**
- **Mechanical Systems**
- **Thermal/Fluids Systems**
- **Power, Electrical & Control Systems**
- **Radiation Hardened Electronics**
- **Optics and Laser Systems**
- **Environmental Testing**
- **Test Validation and Prediction on Systems**
- **Ground Processing, Logistics & Maintenance**
- **Ground & Flight Safety & Hazard Analysis**
- **Support Services**
  - Configuration & Risk Management, Product Assurance, Information Technology, Outreach

Engineered Products & Solutions

- **Spaceflight Hardware & Software**
  - Hardware & Software Development, Integration, Test and Certification
  - Crew and Ground Support Personnel Training & Real Time Operations
  - Low Earth Orbit, Deep Space, Pressurized, Unpressurized
  - Space Shuttle, MIR, International Space Station, Progress, ARES, ORION, Satellite
  - Microgravity Science, Human Health, Exploration Technology
- **Real Time Operations**
  - Crew Training & Human Factors Analysis
  - Ground & Flight Displays, Crew Procedures
  - On-Orbit Operations, Telescience Support Center Development and Operations
- **Enabling Technologies**
  - State of the art harsh environments analysis and technologies
  - Micro Electro Mechanical Systems (MEMS)
  - RF Telemetry, Integrated Communications & Remote Device Control
- **Aerospace Power Systems**
  - Power Management and Distribution Systems with various Aerospace applications

Technology without Boundaries

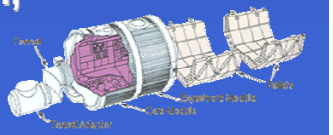
SYSTEMS ENGINEERING

- REQUIREMENTS
- INTEGRATION AGREEMENTS
- RESOURCE ALLOCATIONS
- SYSTEM VERIFICATION
- SYSTEMS PERFORMANCE
- USAGE AGREEMENTS & TRACKING
- SYSTEM LEVEL SAFETY

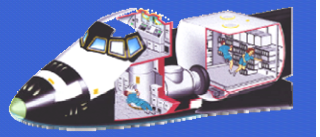
ZIN Technologies

ENGINEERING AND TECHNICAL SERVICES

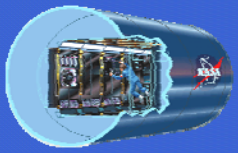
Systems Engineering



- Requirements analysis, systems analysis, technology insertion, resource allocation, design integration, interface coordination, technical reviews and audits, logistics, verification test and configuration management.
- Experience with system requirements and verification software (such as DOORS) used on programs with as many as 22,000 individual requirements.



- ZIN is experienced with GIDEP, IEEE parts, MIUL and Material Usage agreements and tracking.
- ZIN has extensive experience performing integrated system verification analysis and testing.
- We are experienced with flight hardware Acceptance Data Package preparation and hardware certification.
- ZIN has experience developing, maintaining Integration Agreements, Interface Control Documents and Verification Plans.



- Design of hardware to include commonality for interchangeable parts, electrical and avionics systems designed to support technology upgrades over life of system.
- We regularly perform Flight/Ground Safety & Hazard Analysis and present to the JSC Safety Panel.
- ZIN has performed logistics support analysis on flight hardware to influence designs, develop maintenance tasks and generate provisioning (i.e. spare parts) data and currently performs logistics and maintenance using ZIN developed tracking tool for the FCF Program.

Technology without Boundaries

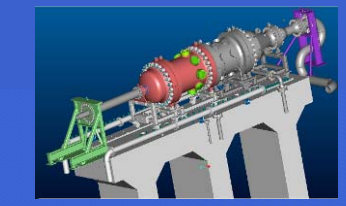
CORE ENGINEERING CAPABILITIES

- MECHANICAL DESIGN
- THERMAL & STRUCTURAL ANALYSIS
- SAFETY CRITICAL STRUCTURES
- PRESSURE SYSTEMS
- WATER AND AIR COOLING
- RADIATIVE HEAT TRANSFER
- DESIGN FOR VACUUM AND NON-VACUUM ENVIRONMENTS
- PERFORMANCE VERIFICATION

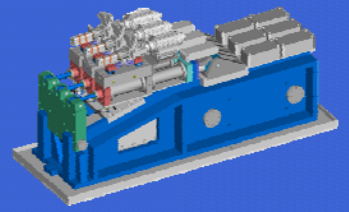
ZIN Technologies

ENGINEERING AND TECHNICAL SERVICES

Mechanical Systems

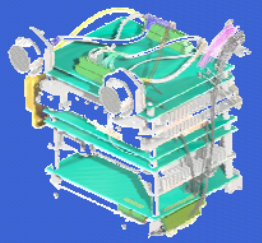


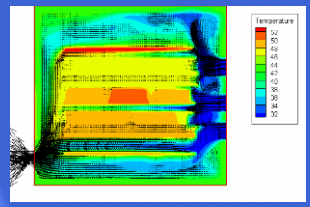
- ZIN is experienced with Acceleration measurement/Abatement, Pressure Vessels, Safety Critical Structures, Structural Dynamics and Analysis (MSC, NASTRAN, PATRAN, ANSYS) and Mechanical Design & Packaging (AutoCAD 2000 & ProEngineer).
- We can perform stress/deflection, vibration and buckling analysis, fatigue and fracture control, aero-elastic excitation, pressure vessel and vacuum tank design and analysis. We utilize FLAGRO and NASGRO for crack growth and fatigue analysis.



Thermal/Fluids Systems

- ZIN's thermal/fluids systems experience includes active/passive design and modeling, Computational Fluid Dynamics Modeling, Thermal Analysis (ANYSYS, SINDA, FLUINT), High Vacuum to High Pressure Systems and Cryogenics and High Temperature Systems.
- We use thermal modeling to design electronics packages for vacuum and microgravity environments without natural convection.
- Electronics packages can be developed and optimized to provide cooling for the electronics through conductive and radiative cooling.
- Modeling analyses are used for both design optimization and performance verification.





Technology without Boundaries

CORE ENGINEERING CAPABILITIES

POWER MANAGEMENT & DISTRIBUTION

ELECTRONICS & AVIONICS

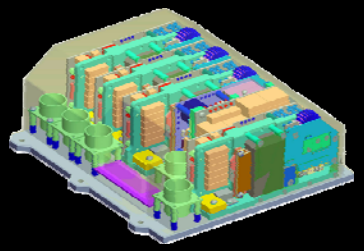
ELECTRICAL DESIGN

COTS RUGGEDIZATION

DIGITAL & ANALOG

INTEGRATION & TEST

POWER CONVERSION



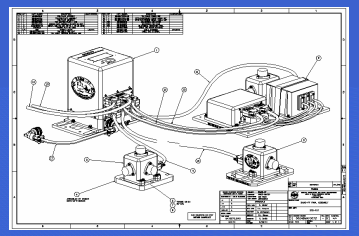
ZIN Technologies

ENGINEERING AND TECHNICAL SERVICES

Power, Electrical & Control Systems

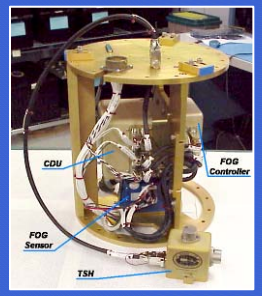
- ZIN's power, electrical & control system experience includes significant expertise in power management and distribution systems.
- Our electronics analysis tools include ORCAD, SPICE and SIMPLORER.
- We have experience designing and testing Radiation Tolerant and Hardened power converters, avionics and diagnostic electronics for near earth orbit and deep space radiation environments.
- We can perform complete electrical design including hardware and software – cables and harnessing, conformal coating.
- ZIN has experience with digital and analog, sensors, motion control, video control and processing, Laser diagnostics, network communications, power conversion and conditioning.
- We can design, produce and test custom printed circuit boards or use/modify COTS solutions.
- We prepare all documentation where required during the design and fabrication process.

Sample Drawing



In-House PCB

Assembled System Ready for Test



Integrated Flight Hardware

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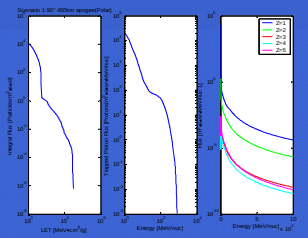
ENVIRONMENTAL MODELING, ANALYSIS & TEST

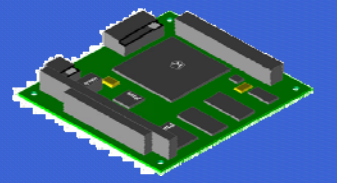
ZIN Technologies

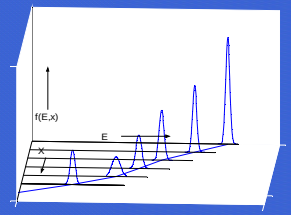
ENGINEERING AND TECHNICAL SERVICES

Radiation Hardened Electronics

- **Experience designing and testing Radiation Tolerant and Hardened power converters, avionics and diagnostic electronics for near earth orbit and deep space radiation environments.**
- **Radiation Models depicting effects of neutrons and protons with energy deposited for the physical vehicle environment, material compositions, physical size and other variables:**
  - Modeling is effective in providing absorbed dose rates, and fluence at locations within the electric circuits and avionics
- **Testing – Defining threshold values for failure modes (permanent and temporary) for ruggedized electronics and customer avionics/diagnostics:**
  - Experience using cyclotrons to expose electronics to a uniform particle beam to extract failure rate information
  - Experience with certification and design by assessing radiation induced functional interrupt rates and other error rates per a given mission operational scenario
- **Experience estimating Single Event Effects (SEE), Single Event Upset (SEU), Functional Interrupt (FI), Single Event Latchup (SEL) and Single Event Burnout (SEB) for composite Mean Time Between Failure due to atomic displacement for a device or system.**







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OPTICS AND LASER TECHNIQUES

IMAGING

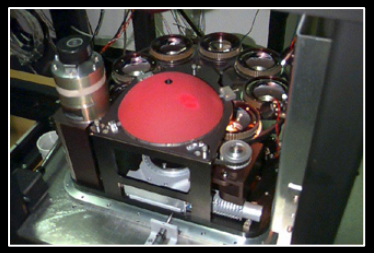
ILLUMINATION

DESIGN

LIGHT SCATTERING

SPECTROMETRY

MICROSCOPY

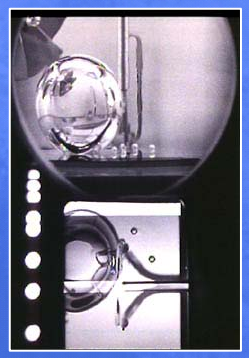


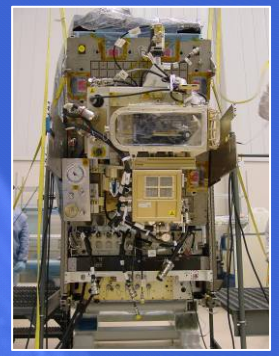
ZIN Technologies

ENGINEERING AND TECHNICAL SERVICES

Optics and Laser Systems

- **ZIN's optics and laser systems experience includes:**
  - Digital and analog imaging and illumination
  - Particle imaging and stereo imaging velocimetry
  - Interferometry and color schlieren
  - Diffusing wave & transmission spectroscopy
  - Dynamic & static light scattering and digital imaging & processing.
- **We use the Z-max optical design program for optical design and analysis.**





Technology without Boundaries

ENGINEERING AND TECHNICAL SERVICES

FLIGHT AND GROUND SOFTWARE

DESIGN/DEVELOPMENT

SYSTEM ENGINEERING

INTEGRATION

TEST

VERIFICATION

PRODUCT ASSURANCE

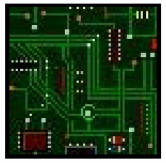
Software Development

- ZIN utilizes NASA standards for software assurance and the Capability Maturity Model of the Software Engineering Institute.
- We are experienced with development of both ground and flight software including documentation for all software components, requirements and verifications for conducting effective inspections, reviews and audits.
- Our software teams are proficient at managing and executing system, functional and regression tests creating effective test strategies for projects with varying degrees of complexity.
- We have expertise in planning for the full life-cycle of the software. We utilize formal configuration management systems for software and flight system software products.

Languages, OSes, Servers & Tools

- Java
- C/C++
- Visual Basic
- ASP
- Cold Fusion
- Perl
- PHP
- EJB
- Flash
- Director
- Lingo
- IIS
- Apache
- Tomcat
- WebSphere
- WebLogic
- All MS Flavors
- Linux
- BSD
- Solaris
- OS/400
- MacOS
- Cisco
- Novell
- LAN/WAN infrastructure
- RAS
- VPN
- Cabling
- Backup and Recovery
- ERP Systems
- Business Systems

Capabilities



- Embedded software
- Ground station sw
- Uplink
- Downlink
- Remote PI data distribution
- Standard building blocks for MSG, EXPRESS, & DECLIC carriers

Tools based on the Unified Modeling Language (UML) support the analysis and design of flight software

ZIN has experience performing design and analysis using Rational Rose, System Architect, and Microsoft VISIO 2000

Space Flight Hardware	Space Vehicle	Operating System(s)	Language(s)	Platform(s)
SAMS & MAMS	Shuttle. MIR & ISS	None, NetBSD	C, C++ Assembly	STD x86 Family
IDGE	Shuttle	DOS	PASCAL	STD 486
CM-1	Shuttle	VRTX	C	VME
MSC	Shuttle	Byte BOSS	Borland C	STD x86 Family
PHaSE	Shuttle	Windows	Visual C++	PC/104 Pentium Family
PCS, ERE	Shuttle & ISS, Sounding Rocket	WindowsNT	Visual C++	ISA/PCI Pentium Family
SAMS-FF	Shuttle	QNX	C/C++	PC/104 Intel 486, PII
FCF	ISS	VxWorks	C++	CompactPCI, PC/104, PowerPC, Pentium

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SOFTWARE DEVELOPMENT CAPABILITIES

- GROUND SYSTEMS
- FLIGHT SYSTEMS
- EMBEDDED CONTROLS
- GROUND CONTROL AND COMMUNICATIONS
- DIGITAL IMAGING AND ANALSYIS
- ON-BOARD PROCESSING
- COMMERCIAL APPLICATIONS
- DESIGN TOOLSET

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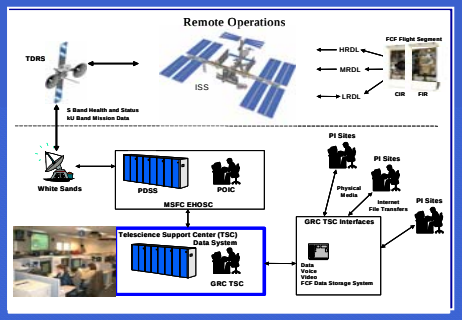
ENGINEERING AND TECHNICAL SERVICES



Ground and Flight Software Development Experience

- System Architecture Definition
- Software Requirement development and NASA space flight qualified ground and flight software development, verification and validation for numerous systems and payloads
- Embedded Control Systems
- Systems to Minimize Crew Time Requirements
- Autonomous Remote Communications and Control
- Ground Control and Communications
- Real-Time Communications and Data Down-Link
- C++, ADA, VxWorks, QNX, NETBsd, Windows NT
- FPGA Programming
- Digital Imaging and Analysis
- On-Board Processing to minimize data downlink bandwidth
- Experienced with the NASA Independent Verification and Validation Group

Technology without Boundaries

ENVIRONMENTAL MODELING, ANALYSIS & TEST

EMI

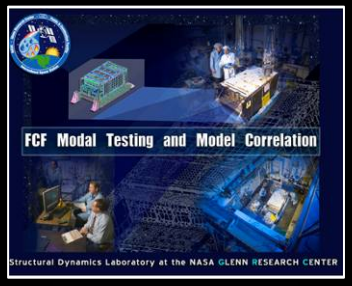
ACOUSTICS

VIBRATION

MICROGRAVITY EMISSIONS

THERMAL

Experienced Operating Structural Dynamics And Micrograv ity Facilities At NASA GRC



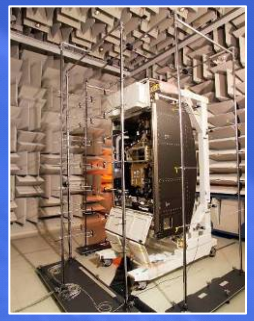
ZIN Technologies

ENGINEERING AND TECHNICAL SERVICES

Test and Evaluation

- **ZIN routinely performs environmental testing for aerospace and spaceflight hardware including microgravity emissions, EMI, vibration/modal survey, acoustic, off gass, thermal, salt spray and explosion.**
- **We have access to inspection and calibration labs and maintain a calibration database.**

Human Factors



Acoustic Testing

EMI Testing

Off Gas Testing

Integrated Payload Testing

Vibration & Modal Survey Testing

Integrated Thermal Testing

Mission Sequence Testing

Technology without Boundaries

UNIQUELY POSITIONED TO EFFICIENTLY DEVELOP OPERATIONAL CONCEPTS FOR SPACE FLIGHT MISSIONS

Software Development
Resource Planning
Mission Simulations & Training
Crew Training & Documentation
Real Time Operations

High Fidelity Crew Training
Unit Design & Development
Crew Training Materials Development
Crew Procedure Development
OBT Development
CDROM Based Training Materials

ZIN Technologies

ENGINEERING AND TECHNICAL SERVICES




ZIN MISSION OPERATIONS EXPERTISE

From the Glenn Research Center in Cleveland OH, ZIN Technologies performs in coordination with other NASA Centers (MSFC, KSC, JSC, GSFC):

- Telescience Support Center Management and Operations
- IT Infrastructure Development, Verification & Certification
- Complex Systems Integration
- Mission & Resource Planning, Flight Design and Analysis
- Ground & Flight Procedures and Displays
- Crew Training - Simulators, Classroom and Computer Based
- Ground Support Personnel Training – Classroom, Mission Simulations
- Real-Time Mission Operations
- Flight and Ground Software Development & Integration
- Ground Segment Operations & Maintenance
- Flight Hardware Development, Logistics & Maintenance
- Flight Hardware Integration and Processing
- Depot - Manufacture, Repair and Procurement

Technology without Boundaries

SPACEFLIGHT HARDWARE & SOFTWARE

CORE COMPENTENCY
Engineering & Technical Services

98 SUCCESSFUL PAYLOADS

AVIONICS

POWER SYSTEMS

DATA ACQUISITION

IMAGING & PROCESSING

ACCELERATION MEASUREMENT

MANUFACTURING

ANALYSIS & TEST

ZIN Technologies

ENGINEERED PRODUCTS & SOLUTIONS

SPACEFLIGHT HARDWARE DEVELOPMENT EXPERTISE

- **ZIN has designed, developed, fabricated, and operated over 100 space flight hardware payloads on STS, ISS, and MIR**
- **ZIN has launch on STS, Progress and ATV vehicles and has certified hardware for launch on HTV**
- **ZIN has developed payload avionics with both ruggedized COTS and custom Avionics and Power**
  - Data Acquisition and Control
  - Power Conditioning and Control
  - Network Communications for uplink/downlink
  - Health Monitoring
  - Remote Operations from Ground for minimal crew interaction
  - Avionics systems with custom and COTS utilizing standard bus architectures
- **ZIN current provides all (design, development, and operations) for NASA Glenn Research Center's (GRC) current payloads on-board the ISS**
- **ZIN performs concept definition, detailed design, engineering, manufacturing, integration, testing, verification, certification, maintenance, ground processing, training and operations services for Space Flight hardware.**

Technology without Boundaries

EXPERIENCE WITH MANY SPACE PLATFORMS

SOUNDING ROCKETS

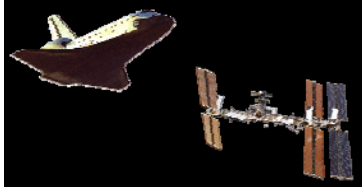
SHUTTLE

SPACELAB

SPACEHAB

MIR

ISS



ZIN-Tech has unrivaled small business experience developing spaceflight hardware & software

ZIN Technologies

Examples of ZIN Developed Products On-Orbit










Technology without Boundaries

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NASA CONSTELLATION PROGRAM

ZIN has leveraged its space flight heritage and experience to provide expertise and support to NASA and the Primes for Constellation Systems in the areas of Avionics, Electro-mechanical systems, Thrust Vector Control, Test and Verification and Composite Structures analysis

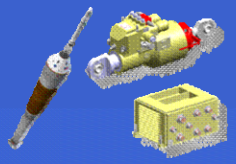
Current NASA Project Constellation contracts support:

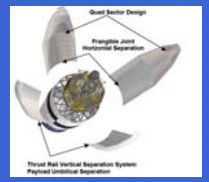
- Constellation Technologies Development
- ORION Crew and Service Modules
- ORION and LSAM Ground Test Capability
- ARES I Upper Stage
- ARES V Composite Design Analysis Trades
- Constellation Space Suits

During the CEV/ORION Phase I development efforts, ZIN was an active participant in the areas of power storage, distribution and conversion, avionics, data acquisition and processing, and subsystem sizing through mission analysis and design.

We have current contracts supporting Prime Contractors with responsibility for developing the ORION and ARES space vehicles.

ZIN has been awarded a BPA concerning Specialized Engineering and Project Support to the *NASA Marshall Spaceflight Center (MSFC)* to provide future technical needs and technical organization support for emerging exploration tasks.





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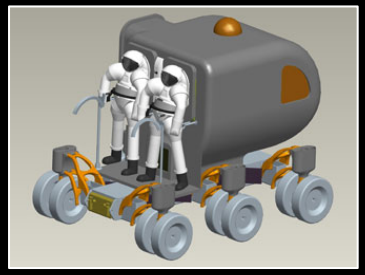
SPACE EXPLORATION AND TERRESTRIAL APPLICATIONS

EXERCISE COUNTERMEASURE

IV WATER

BIOMETRIC MONITORING



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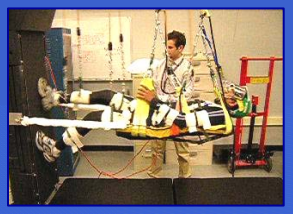
HUMAN HEALTH & MEDICAL DEVICES

Solving the medical and physiological problems of spaceflight and lunar exploration requires novel, small, low power, non-invasive and versatile instrumentation and hardware.

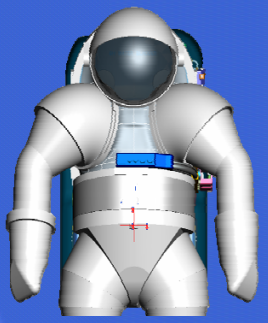


The ZIN Team focuses on the following areas:

- **Technology to influence and monitor the physiologic adaptation to weightlessness.**
- **Technology to support medical care in space and on planetary surfaces.**
  - Monitoring and preventing bone and muscle loss
  - Detecting changes in physiological parameters including cardiovascular status
  - Assessing/preventing the risk from lunar dust
  - Providing emergency room capability
  - Developing training systems to maintain proficiency

- **ZIN is developing advanced exercise devices being developed for CEV and Lunar Outpost. These devices focus on strength and aerobic health and should require no external power.**
- **Can be mounted in CEV or TBD Lunar Outpost mounting configuration**

The technologies developed are intended to meet NASA needs and also have a clear overlap into clinical medicine and/or commercial application. Deliverables will include working devices and computer models that can be applied to NASA's needs or to commercial space operators' needs.



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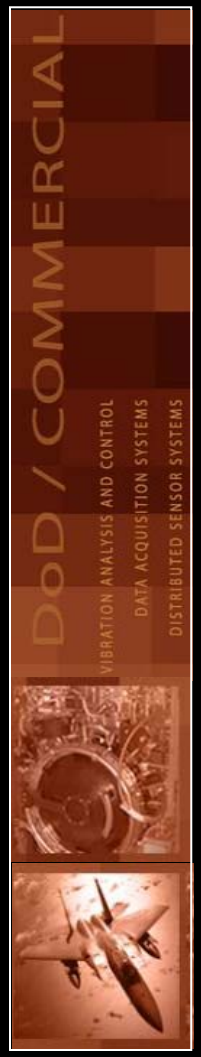

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ENABLING TECHNOLOGIES

ZIN Technologies is committed to the application of advanced technologies to provide solutions for our customers needs. ZIN-Tech is currently leveraging our NASA technology base for the design and development of products for the defense and aerospace markets in the areas of data acquisition, vibration measurement and control, avionics and optical diagnostics.

Enabling Technologies, Sensing & Detecting

- **Advanced Technical Applications**
- **Harsh Environment Analysis & Sensing**
- **Low Gravity Environment Control And Effects**
- **Integrated Communications & Remote Device Control**
- **Micro Electro Mechanical Systems (MEMS)**
- **Biomems and RF Telemetry Development**
- **Nano Technology/Thin Film Processing**

ZIN Technologies seasoned project management team combines our experienced engineering staff with advanced technology to develop cost effective solutions. We work with our customers to develop requirements based on performance, cost and schedule and maintain close communications throughout the development process to ensure success.

ZIN-Tech's DoD/Commercial Division has been a supplier to mostly Fortune 500 companies.

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LEADER IN DESIGN AND FABRICATION

AC-DC POWER CONVERSION

WITH AND WITHOUT POWER FACTOR CORRECTION

SYSTEMS HAVE RANGED FROM A FEW WATTS TO A MEGAWATT IN POWER

LOW VOLTAGE TO KILOVOLTS

60HZ TO SEVERAL HUNDRED KILOHERTZ

OPERATING TEMPERATURES RANGING FROM +200°C TO -190°C

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ZIN Technologies Power Experience

ZIN Technologies has over 46 years of design, build, and integration experience with a history of providing advanced technology solutions to industry, national research institutions, and government agencies. We provide successful power solutions for land, sea, air and space that encompass complex standards and stringent requirements.

Few power converter companies can match ZIN's design capabilities:

- Products draw on proprietary state-of-the-art technologies.
- Resource depth and modular technologies enable ZIN to rapidly deliver working prototypes and respond to emerging customer requirements.
- We are solution-focused which enables us to meet our customers' demanding specifications, performance requirements, and cost targets.

We provide high reliability power products for rugged industrial and military applications such as nuclear plants, F-16s, the International Space Station and satellites. ZIN designs, builds and tests AC/DC, DC/DC and DC/AC power conversion products ranging from 40 watts to 100,000 watts / single phase, three phase or DC input. RAD hardened products available.

We can provide full PDR/CDR documentation, finalized drawings, and GANTT/milestone charts. We qualify and test each design for full EMI (MIL STD 461E), as well as shock, vibration and environmental testing.

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ZIN Technologies

ZIN Delivers Superior Products, Technology and Engineering Services to Advance the Strategic Needs of Your Business

ZIN Technologies is a sophisticated experienced minority owned small business with a strategy to become a key partner for Prime Contractors by providing a unique approach to supporting your program success while meeting small business targets.

ZIN Technologies specializes in the seamless and transparent progression between concept, detailed design, engineering, manufacturing, integration, testing, verification, certification, maintenance and operations.

Based on our experience as a NASA prime contractor, we are capable of providing complex aerospace products and engineering support with confidence.

By leveraging the lower cost structure of our Cleveland based business and our ability to manage other small and large sub-contractors, our strategy is to provide capability that can grow with the entire lifecycle of your programs while delivering superior value and minimizing your burden in managing your small business requirements.

By working closely with you over time to integrate into your business and understand your full range of requirements, we hope to be the small business solution for the long term.

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